

IN THE SPECIFICATION:

Page 1, replace the paragraph starting at line 7 and ending at line 14 with the following paragraph.

The present invention concerns hearing aids. In many hearing aids, for example "In the ear" (ITE) and "Behind the ear" (BTE), the microphone and the receiver (telephone) components are placed close to each other. This may result in ~~that~~ the sound produced by the receiver ~~leaks~~ leaking back into the microphone. This may occur when the hearing aid shell or the ear mould does not fit sufficiently tight in the ear canal. Given enough amplification in the hearing aid, the loop gain of the system may exceed 0 dB at some frequency and a feedback oscillation may be produced.

Page 1, replace the paragraph starting at line 18 and ending at line 21 with the following paragraph.

The present invention is based on algorithms previously proposed in the literature. The invention concerns a number of algorithm modifications, which overcome some of the limitations of other systems used for feedback reduction in hearing aids.

Page 1, replace the paragraphs starting at line 23 and ending at page 2, line 10 with the following paragraph.

The invention relates to a feedback cancellation algorithm, which does not need an artificial noise signal in order to estimate the feedback transfer function. The input signal received from the environment, or the feedback oscillation signal, is used to drive the estimation process. In

this fashion, the hearing aid user does not listen to an added noise signal, and a higher sound quality is possible. However, it is well known that such 'no noise' algorithms can have audible side effects under certain circumstances, especially when environmental signals with long autocorrelation functions are present at the microphone.

The autocorrelation function for a signal describes the average correlation between two signal values, which are separated by a time difference "Lag". In loose terms, the autocorrelation function describes how "predictable" a signal value is, given the other samples in the signal. Some signals, for example periodic signals, are highly predictable and, correspondingly, the autocorrelation function does not vanish even for large values of Lag. Other signals, such as white noise, are ~~very little~~ generally not predictable, and their autocorrelation function quickly ~~vanish~~ vanishes for increasing values of Lag. For signals with a long autocorrelation function, a future sample value can be predicted with a high degree of confidence, given the past samples. In other words, new samples of the signal do not provide much new information. Careful analysis of feedback cancellation systems ~~reveal that~~ signals with long autocorrelation may drive the adaptive system to produce poor estimates of the feedback path.

Page 2, replace the paragraph starting at line 12 and ending at line 14 with the following paragraph.

It is the objective of the present invention to provide a method and a hearing aid for feedback cancellation, which improves the result of the

feedback cancellation by having fewer audible side effects and thereby gives an improved user comfort.

Page 2, replace the paragraph starting at line 18 and ending at line 20 with the following paragraph.

According to the invention the objective is achieved by a method, which ~~comprises the feature of claim 1. According to the invention the first objective is likewise achieved by a hearing aid, which comprises the features of claim 6.~~ includes the steps of: providing a LMS algorithm for generating filter coefficients; where the LMS algorithm operates with a predetermined essentially level independent adaptation speed when feedback is not present, this representing a first mode, where the LMS algorithm operates a level dependent adaptation speed when feedback is present, this representing a second mode; where the means for detecting the presence of feedback is used to control the adaptation mode selection of the LMS algorithm and where the feedback detection means comprises bandwidth detection means for determining the presence of a feedback signal.

Page 2, replace the paragraphs starting at line 22 and ending at line 32 with the following paragraphs.

Hereby a low adaptation speed, which generally improves the sound quality for signals with long autocorrelation functions, is applied when no feedback oscillation is present and a high adaptation speed, which is desirable to reduce feedback oscillations quickly, is applied when feedback oscillation is present, hereby maintaining the preferred mode when